

**GOVERNMENT OF TELANGANA
ABSTRACT**

Agriculture and Cooperation Department – Implementation of the Scheme of “Development of Crop Colonies and Soil Water Analysis” in the State- Approval of Project and Guidelines – Accorded – Orders - Issued.

AGRICULTURE AND COOPERATION (AGRI.II) DEPARTMENT

G.O.Rt. No.130

Dated 12 -03-2015
Read the following:-

1. From the Director of Agriculture, Telangana, Hyderabad
Lr.No.Plg(2)5/2014, Dated 22-01-2015.
2. Govt.Memo.No.536/Agri.II(1)/2015,Dated 03-02-2015.
3. From the Director of Agriculture, Telangana, Hyderabad
Lr.No.Plg(2)5/2014, Dated 24-02-2015.

ORDER:

In the references 1st and 3rd read above, the Director of Agriculture, Telangana, Hyderabad has stated that the Government have allocated Budget towards Implementation of the Scheme of “Development of Crop Colonies & Soil Water Analysis” for Soil Resource mapping, Setting up of new Labs, Training to Young Farmers, Training on Integrated farming, Training of development of Crop Colonies etc., Accordingly, the Director of Agriculture, Telangana, Hyderabad has submitted the project proposals along with guidelines and requested to accord approval for implementation of the Scheme.

2. Government, after careful examination of the proposal, hereby accord approval for implementation of the Scheme of “Development of Crop Colonies & Soil Water Analysis” in the State, as per the Scheme and guidelines annexed to this order.

3. The Director of Agriculture, Telangana, Hyderabad shall take further action in the matter.

(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)

Dr.POONAM MALAKONDAIAH
APC & PRINCIPAL SECRETARY TO GOVERNMENT

To

The Director of Agriculture, Telangana, Hyderabad

Copy to:-

The P.S. to Minister(Agri.&AH)

The P.S. to Principal Secretary to Govt.(Agriculture)

The Finance (EAC / EBS.II) Department.

The Accountant General, Telangana, Hyderabad

The Pay & Accounts Officer, Telangana, Hyderabad

The Director of Treasuries & Accounts, Telangana, Hyderabad

SF/SC

//FORWARDED BY ORDER//

SECTION OFFICER

ANNEXURE

Annexure to G.O.Rt.No.130, A&C (Agri.II) Dept. Dated 12-03-2015

GUIDELINES FOR IMPLEMENTATION OF THE SCHEME DEVELOPMENT OF CROP COLONIES AND SOIL WATER ANALYSIS

DEVELOPMENT OF CROP COLONIES

The following training programmes to the farmers of Telangana should be organized through 9 FTCs (Farmers' Training Centers) in the state with a mandate to impart the trainings to Farmers, farm women and young farmers.

1. Training of farmers on Integrated Farming
2. Training of farmers on Development of crop colonies
3. Training to Young Farmers

To make the farmers' trainings more effective and reach the targeted farmers groups the Farmers Training Centers are directed to follow these guidelines scrupulously.

Methodology of implementation for organizing the Trainings:

1. Training of farmers on Integrated Farming:

It is proposed to conduct one Training in each mandal of the each district per year to impart training to 50 farmers per mandal. **The course content of the Training of farmers on Integrated Farming will be as follows.**

- Crop diversification based on farming situation with income oriented.
- Improved technology in locally cultivated crops of Vegetables, Commercial crops like Ginger, Turmeric, Potato and fruit crops.
- Integrated farming with reference to Dry land Agriculture .
- Improved technology in cultivation of Mulberry and silkworm rearing.
- Growing of fodder crops suitable to local areas
- Creating awareness on Fish seed production and stocking
- Creating awareness on Establishing of Poultry
- Creating awareness on development of Dairying
- Creating awareness on Sheep rearing
- Creating awareness on Apiculture

Note: 4- 5 topics should be selected by the FTCs based on local situations, need specific and profit oriented in consultation with DAATTC scientists and line departments.

1. Training of farmers on Integrated Farming

GUIDELINES for Organizing Trainings on Integrated Farming:

- The course will be of 2 days duration. The farmers will be reimbursed their bus fares for reaching to the Training venue.
- Training should be scheduled from 9.00 AM to 5.00 PM with 15 minutes tea break and 30 minutes lunch break.
- He / She should be between 18 to 50 years age

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- He/she should have farm holdings and should practice farming.
- He/She should have communication skills in order to disseminate the technology to fellow farmers
- Trainee should be preferably a progressive farmer.
- Select 2-3 progressive farmers per each village of every Mandal. For each training 50 farmers should be allowed.
- Tea, biscuits and lunch would be served to the farmers, extension staff and as well Trainers/Resource persons on training days
- Trainings should be organized in co-ordination with the Agricultural allied Departments DAATTC scientists, university of Agriculture and Bankers.
- Ensure the participation of Bankers to create awareness on financial assistance in each agricultural & allied sectors' enterprises.
- 4- 5 topics of course content should be selected by the FTCs based on local situations , need specific and profit oriented in consultation with DAATTC scientists and Allied departments
- The training schedules and topics to be dealt should be sent for approval of competent authority prior to starting of trainings.
- Select the topics those gratify the local needs of the farming, better utilization of available resources and profit oriented which instill the confidence in the farmers towards agriculture

2. Training of farmers on Development of Crop Colonies:

It is proposed to conduct trainings to Rice, Maize, Pulses and Oilseeds growing farmers on Development of Crop colonies in the districts one training in Kharif and one in Rabi season through (9) FTCs to impart knowledge on improved cultivation practices in the respective crops. The course content of the Training of farmers on Development of crop colonies will be as follows:

- Cropping Systems based on farming situations.
- Improved technology in cultivation of Rice, Maize, Redgram, Bengalgram, Groundnut, Soybean ,Castor, sunflower and safflower specific to local situations
- Soil test based fertilizer application and INM Focusing the reduction in the usage of fertilizers so as to reduce the cost of cultivation and to improve the soil health condition.
- IPM and ICM
- Importance of Organic farming in Rice, Maize, Redgram, Bengalgram, Groundnut, Soybean ,Castor, sunflower and safflower specific to local situation.
- Mulching and use of anti-transpirants to minimize the demand for irrigation water.
- Creating awareness on Micro-irrigation.
- Farm mechanization and post harvest technology in Rice, Maize, Redgram, Bengalgram, Groundnut, Soybean ,Castor, sunflower and safflower specific to local situation.
- Creating awareness on production of Quality seed to meet the marketing standards to get good marketing price
- Creating awareness on scale of finance for crops and crop insurance.
- Creating awareness on value addition products

Note: Additional Topics may be added by the FTCs based on local situations, need specific and profit oriented in consultation with DAATTC Scientists.

GUIDELINES FOR ORGANIZING TRAINING OF FARMERS ON DEVELOPMENT OF CROP COLONIES:

- The course will be of 2 days duration. The farmers will be reimbursed their bus fares for reaching to the Training venue.
- Training should be scheduled from 9.00 AM to 5.00 PM with 15 minutes tea break and 30 minutes lunch break.
- He / She should be between 18 to 50 years age and should have farm holdings.
- He/She should have communication skills in order to disseminate the technology to fellow farmers
- Trainee should be preferably a progressive farmer and cultivate that particular crop.
- For each training 50 farmers of that concerned crop colony should be allowed.
- Tea, biscuits and lunch would be served to the farmers, extension staff and as well Trainers/Resource persons on training days
- Trainings should be organized in co-ordination with the DAATTC scientists, university of Agriculture and Bankers.
- Ensure the participation of Bankers to create awareness on scale of finance for crops and premium for crop insurance.
- Select the topics those gratify the local needs of the farming, better utilization of available resources and profit oriented which instill the confidence in the farmers towards agriculture.

3. Training to Young Farmers:

It is proposed to conduct four trainings/Month per District for 50 young farmers per Training through (9) FTCs to orient them towards farming. The course content of Training to Young Farmers broadly will be as follows.

- Low cost cultivation technology in locally specific crops
- Production of ornamental flowers through Green house technology (poly houses)
- Post harvest technology for Vegetables ,ginger, Turmeric, Potato and fruit crops,
- Modernization in Farm mechanization specific to reduction of manual labour and creating of awareness on custom hiring centers.
- Creating awareness on export quality parameters of commercial crops (eg.minimum pesticides residues levels in chillies etc.) and fruits crops.
- Creating awareness on usage of Solar energy to curtail the usage of electrical power (for eg: solar pumps,fencing etc.)
- Creating awareness on Micro-irrigation
- Creating awareness on production of Quality seed to meet the marketing standards to get good marketing price
- Organic farming in locally specified remunerative commercial crops, vegetables and fruit crops
- Improved technology in cultivation of Mulberry and silkworm rearing.
- Fodder production.
- Integrated farming systems.

Note: 4- 5 topics should be selected by the FTCs based on local situations, need specific and profit oriented in consultation with DAATTC scientists and line departments. One of the topics should be integrated farming systems.

GUIDELINES for Training to Young Farmers:

- The course will be of 2 days duration. The farmers will be reimbursed their bus fares for reaching to the Training venue.
- Training should be scheduled from 9.00 AM to 5.00 PM with 15 minutes tea break and 30 minutes lunch break.
- He/ She Should be between 20-35 years age and should have farm holdings
- He /she should practice the farming
- He/ She should have communication skills in order to disseminate the technology to fellow young farmers
- Trainee should be preferably a progressive young farmer.
- Select 2-3 progressive farmers per each village of each Mandal. For each training 50 farmers should be allowed.
- Tea, biscuits and lunch would be served to the farmers, extension staff and as well Trainers/Resource persons on training days
- Trainings should be organized in co-ordination with the Agricultural allied Departments DAATTC scientists, university of Agriculture and Bankers.
- Ensure the participation of Bankers to create awareness on financial assistance in each agricultural & allied sectors' enterprises.
- 4- 5 topics of course content should be selected by the FTCs based on local situations , need specific and profit oriented in consultation with DAATTC scientists and Allied departments
- The training schedules and topics to be dealt should be sent for approval of competent authority prior to starting of trainings.
- Select the topics those gratify the local needs of the farming, better utilization of available resources and profit oriented which instill the confidence in the farmers towards agriculture

GENERAL GUIDELINES TO ALL 3 COURSES:

- Since the FTCs are dearth of staff, Resource persons/Subject matter specialist should be invited from the concerned Departments, PJTSAU/Research institutes /DAATTC or retired Department experts association to deliver the guest lectures on above said topics and will be paid an honorarium of Rs 1000/- per day per head.
- Videos of course topics will also be shown to the participants for effective presentation on topics and Field trip should be organized on course topics as seeing is believing.
- Literature for the above course will be elicited in consultation with University Scientists, DAATTC scientists and Allied departments with specific reference to each district and farming situation and supplied during trainings to participants.
- The training schedules and topics to be dealt should be sent for approval of competent authority prior to starting of trainings.
- The course should have interaction sessions with the farmers by the resource persons..
- Field Trip should be organized to the participants on last day of the training.
- Concentration must be given to habitations with predominant SC, ST population and cover number of small and marginal farmers.

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- Whenever trainings are organized in tribal areas, the ITDA officials' co-ordination may be sought for.
- Create awareness on Soil Test based fertilizer recommendations focusing on the impact point that any company fertilizer with required nutrients, can be used without giving priority to a particular brand or company product.
- Maintain the record of the details of Trainees per each training.
- Focusing the reduction in the usage of fertilizers so as to reduce the cost of cultivation and to improve the soil health condition.
- Focus on Water management and improvement of water use efficiency, importance of I.D. crops, SMSRI and Direct seeding of paddy.
- Farm Mechanization & Organic Farming focusing on Vermicomposting, NADEP composting, exclusively to farm women.
- Maintain the record of the details of Trainees per each training.
- Maintain the SC, ST ratio and 30% women participation in the trainings.
- Monitoring should be done by the concerned District JDAs for proper implementation of the programme.
- The training schedules must be sent to the O/o C&DA for monitoring and to visit the training programmes.
- Prepare the documentation on these trainings and submit to the C&DA. Take the feed back and suggestions from the trainees and record it to perform the useful trainings for farmers.

Pattern of Financial Assistance for each Training:

The total cost for organizing each training is estimated at **Rs.32500** for all three courses. The pattern of financial assistance for following training components of each training for all three courses is as follows.

Training Components:

1. Reimbursement of travelling charges to farmers:

The travelling charges will be reimbursed to farmer duly producing the tickets limited to Rs 50/- per day per farmer. An amount of Rs. 5000/- is allocated to this component for two days training.

2. Providing Snacks, Tea and Lunch:

For each training two times tea and snacks and one lunch will be provided to the farmers. An amount of Rs. 10000/- is allocated to this component for 50 farmers. For tea, snacks and lunch Rs.100/- is provided for each farmer.

3. Eliciting literature:

Literature for the course contents should be prepared in consultation with concerned DATTC/University scientists and agriculture allied sectors. The amount allocated for this component is Rs.2500/- for 50 farmers @Rs. 50/- per each farmer.

4. Mobility:

An amount of Rs.3000/- is allocated towards mobility for two days @ Rs 1500/- per day to bring the resource persons to the training venue.

5. Training arrangements :

For preparation of banners/ flexies , erect tents and for arranging public addressing systems etc., an amount of Rs,300/- is allocated @ Rs, 1500/- per day.

6. Field Trip:

The farmers should be taken to the field trip at the end of the each training which is related to the concerned course . For this an amount of Rs. 4000/- is allocated @ Rs. 80/- per farmer.

7. Honorarium to Resource persons:

Resource persons/Subject matter specialists should be invited from the concerned Departments, PJTSAU/Research institutes /DAATTC or from retired Department experts association to deliver the guest lectures on concerned course topics. An honorarium of Rs 1000/- will be paid per day per head.

8. Miscellaneous :

An amount of Rs.2000/- is allocated to meet the miscellaneous expenditures like hiring of generators when the curtail in power supply, to capture the training Photos and for preparation of Documentation etc.

The guidelines are drafted for successful implementation of farmers trainings under Development of Crop Colonies and soil Water analysis for three courses as mentioned above and are submitted to accord administrative approval to organize trainings during the year 2014-15.

SOIL WATER ANALYSIS

Under this component, three sub components are there:

1. Soil Resource Mapping
2. Mission Soil Health Card
3. Setting up of Soil Testing Labs

Guidelines for implementation of Soil Resource Mapping (Land Resource Inventory of Telangana State)

Introduction:-

Soil survey was earlier carried out of the entire country by National Bureau of Soil Survey and Land Use Planning (NBSS&LUP) ICAR at 1:250,000 scale for district level planning. Moreover, some of the states have been partly or fully covered through soil survey at 1:50, 000 scale for taluk/mandal level planning. However, lack of site specific data, particularly on soils and situations- specific recommendations have been the cause of failure for most of the developmental schemes that have been in operation in the country. Site specific soil and site characteristics are prerequisites for developing such site specific land use plans. Land resource inventory consisting of soil and site characteristics on 1:10000 scales provides such database, which sets the path for using right land use and right agro-techniques on each parcel of land.

Telangana is one of the pioneer states to have taken up soil mapping at 1:50,000 scale in all the districts. The maps are expected to be ready by the end of year 2014-15. Medak district is one, which has been surveyed by NBSS&LUP at this scale. In further advancement in the endeavour, the Govt. of Telangana has expressed keen interest in initiating the LRI Project in the state and invited the authorities of NBSS&LUP to give a presentation on the proposed LRI Project methodology, coordination, etc. The officials from the Govt. of Telangana and Prof. Jai Shankar Telangana State Agricultural University (PJTSAU) had attended the meeting, which was chaired by APC and Principal Secretary (Agril.). All the participants have agreed launching the LRI Project under the terms and conditions contained in the Memorandum of Understanding.

1. PARTIES CONCERNED:

- Commissioner & Director of Agriculture, Govt. of Telangana, Hyderabad
- Director, National Bureau of Soil Survey and Land Use Planning, ICAR, Nagpur.

2. SCOPE OF WORK:

The aim of the project is to:

- To characterize and map the soil resources of all the villages in different mandals of Telangana State at 1:10000 scale.
- To suggest optimal land use plan at village level for intensification of agriculture and rejuvenation of fallow lands.
- To develop Village level Land Resource Information System (LRIS) in GIS environment.

3. MATERIAL AND METHOD:

Material:-

The following material or data needed for the project shall be acquired:

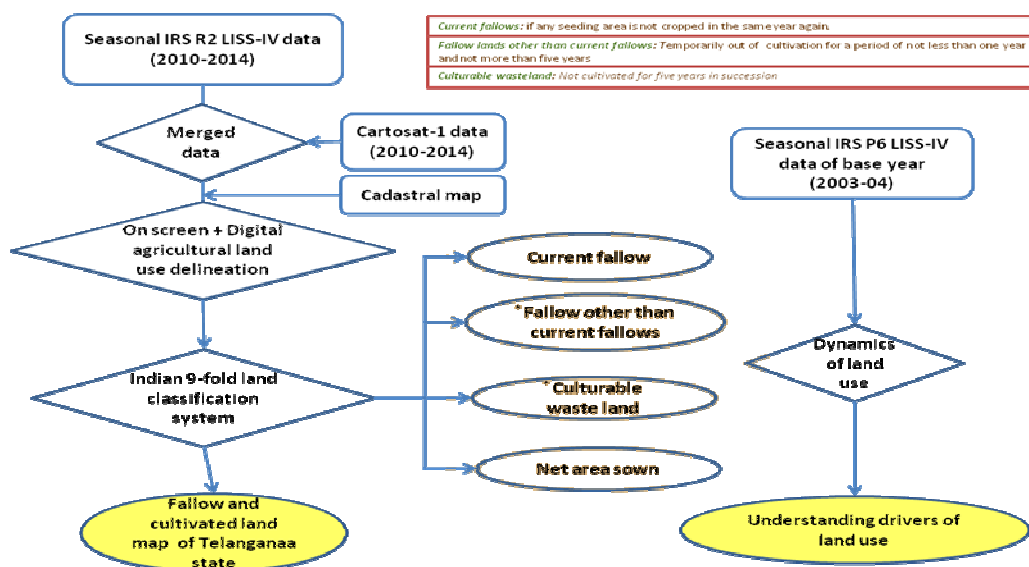
Satellite data:

- Cartosat 1A stereo-pair data of Telangana state for five consecutive years from 2010 to 2014.
- Seasonal data of IRS P6 LISS-IV of Telangana state for five consecutive years from 2010 to 2014 as well as for the base year of 2003-04.
- Cartosat DEM (Digital Elevation Model) of 10m spatial resolution.
- Digitized cadastral map of Telangana state.

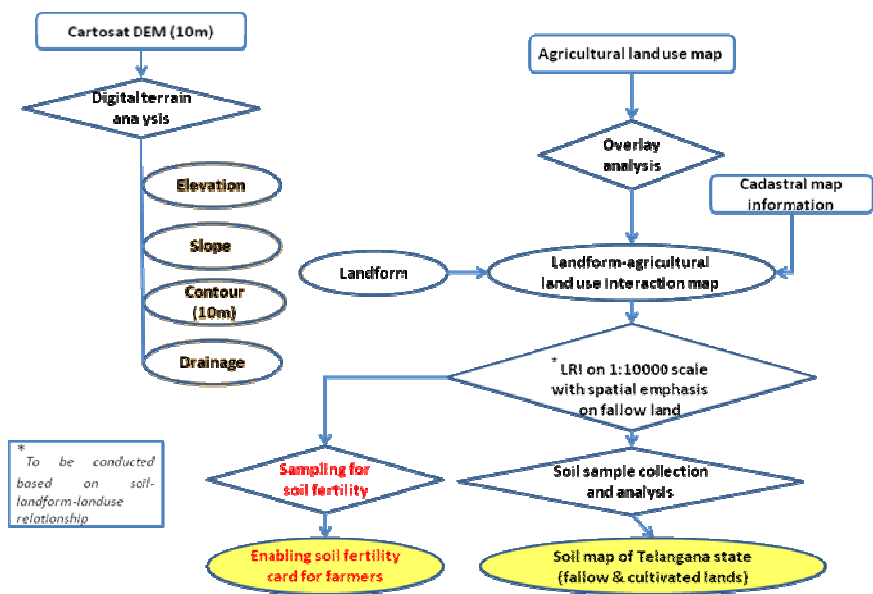
Software:

- Global Mapper version 15.1 or latest.

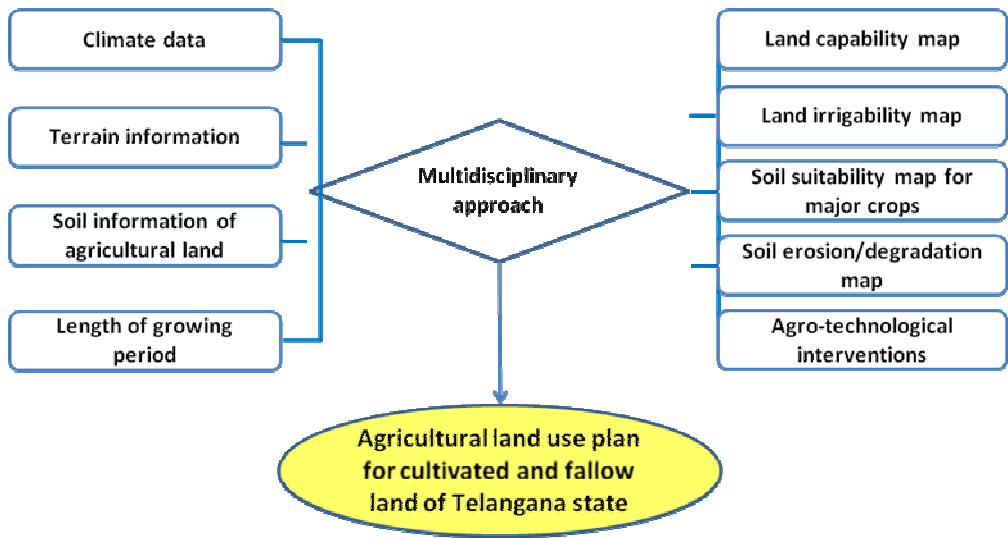
Techniques/Methodology : Flow chart to identify cultivable and fallow lands



Flow chart of the methodology to be adopted in LRI



Flow chart for preparation of village level land use plans



4. INITIATION OF THE PROJECT:

To start with, the NBSS&LUP has taken up a pilot project in three mandals from different agro-ecological and socio-economic situations, so as to develop a comprehensive technological backup in replicating the programme in rest of the state. The 3 pilot project mandals are Indervelli Mandal (Adilabad District), Gajwel Mandal (Medak District) and Thimmajipet Mandal (Mahaboobnagar District).

5. DURATION OF THE PILOT PROJECT:

The project commenced from December 2014 and the task will be completed by end of April 2015.

6. STATE WIDE MAPPING:

Out of the total geographical area of 114.8 lakh ha, the LRI project would cover 75.8 lakh ha by excluding the area under forest and non-agricultural lands.

7. DURATION OF THE MAIN PROJECT:

Although intensive field work would demand a longer time duration, the Govt of Telangana is desirous of completing the task in four years, commencing from May 2015 to April 2019 in a phased manner.

8. FUNDING OF THE PROJECT:

FUNDING AGENCY: Department of Agriculture, Govt. of Telangana.

While the services of NBSS&LUP and the acquisition of satellite data are obligatory on the part of Govt. of India, the State Govt would support the working expenditure, amounting to Rs. 18.15 crores (Table), which shall be released in phased manner. The cost of working expenditure on soil survey is estimated to be at Rs.23 per ha.

The funds for the pilot project is estimated at Rs.25 lakhs, The said amount would not only be required for working expenses, but also to establish initial infrastructure. This amount will be a part of the total project cost. The balance amount of Rs. 17.90 crores may be released in four equal instalments, commencing from April 2015.

S.No	Activities	Cost (lakh)
1	Contingency for field work (including imagery, manpower, TA, DA, vehicle hiring <i>etc.</i>)	1500
2	Chemicals, equipment and preparation maps & reports	100
3	Training, review and workshop	50
4	Total	1650
5	Over head cost @10%	165.0
6	Grand Total	1815.0

9. DIGITIZED VILLAGE CADASTRAL MAPS:

Digitized data of village cadastral maps is a pre-requisite for commencing the field work. It is understood that the digitization process of the village cadastral maps is being carried out by the State Remote Sensing Centre. The state authorities have to arrange the digital data.

10. SOIL FERTILITY MAPPING:

Surface soil samples shall be collected by the NBSS&LUP from each block of 10 ha in the three mandals proposed under pilot project and analyzed for N, P,K,S and micro nutrients. Soil analytical data will be provided to the Dept. of Agriculture by April 2014 for preparing Soil Health Cards using Department's software.

The soil sampling and analysis in rest of the state will, however, be organized by the State Dept. of Agriculture.

11. PROJECT CO-ORDINATION:

It was informed that different GOI Organizations like NRSC, CRIDA, SLUSI and State organizations like Dept. of Agriculture, PJTSAU and State Remote Sensing Centre will be the primary organizations coordinating the project. However, the active role will be of the Dept. of Agriculture.

12. PROJECT MONITORING AND EVALUATION:

A regular mechanism of Project Monitoring and Evaluation shall be in force through half yearly review meetings involving members of all the coordinating organizations to look at the progress and the issues related with the project.

13. DELIVERABLES:

The LRI Project would provide following data in hard and soft copies

1. Village wise soil and thematic maps, duly super imposed with survey number boundaries
2. Suggested land use and land treatment maps
3. Soil survey report of each mandal along with physico-chemical and soil profile characteristics.
4. The entire information shall be uploaded in a web based geo portal for access to all the functionaries and the farming community.

GUIDELINES for implementation of “Soil Health Card” scheme

Introduction:

Soil is a living medium which serves as a natural nutrient source for growth of plants. The components of soils are mineral, organic matter, water and air, the proportions of which vary and together form a system for plant growth.

Intensive agriculture resulted in impressive growth in food grain production powered by improved varieties of seeds, application of fertilizers and assured irrigation. On the other hand, it has also caused second generation problems in respect of nutrient balance including greater mining of soil nutrients to the extent of ten million tones every year, depleting soil fertility, emerging deficiencies of secondary and micro nutrients, decline of water table, decreasing organic carbon content and deterioration of soil health. Indian soils show deficiency of primary nutrients (i.e. NPK), secondary nutrients (such as sulphur), and micronutrients (boron, zinc, copper etc.) in most parts of country.

Site specific nutrient management involving soil test based application of fertilizers is critical to enhance fertilizer use efficiency. A fertilizer not suitable to a soil type can be called as an incorrect fertilizer used for that soil, and fertilizer consumption ceases to be efficient to increase production. Different types of fertilizers are required to be used in acidic/ alkaline soils. Fertigation involving the use of water soluble fertilizers through drip and sprinkler irrigation is expected to give better use efficiency for water and fertilizers. Therefore it is necessary to promote use of required sources of plant available forms of nutrients coupled with use of soil amendments in acidic/ alkaline soils so as to enhance soil nutrient availability.

The Government of India proposed to devise a mechanism to issue Soil Health Cards every 3 years in respect of all land holdings in order to capture the soil fertility changes occurring due to plant uptake or other natural causes. The scheme will be contributed 75% by Government of India and 25% by State Government.

Objectives:

- To issue soil health cards to all farmers of the State, so as to provide a basis to include nutrient deficiencies in fertilization practices.
- To strengthen soil testing facilities and provide soil test based recommendations to farmers for improving soil fertility and economic return to farmers.
- To develop crops specific nutrient management in the districts for enhancing nutrient use efficiency.
- To facilitate and promote use of soil amendments for reclamation of alkaline soils for improving their fertility and crop productivity.
- To promote use of micro nutrients for improving efficiency of fertilizer use.

Scheme components

- i.** Issue of Soil Health Cards: Aims at periodic distribution of Soil health cards to all the farmers to provide information on soil fertility along with recommendations for application of plant nutrients.
- ii.** Demonstration and training on application of soil test based recommendations: Aims at popularizing the recommendations of soil health management in targeted areas.
- iii.** Promotion of Nutrient Management Practices: Aims to provide financial assistance to farmers to apply corrective measures for nutrient deficiencies and popularizing balance and integrated nutrient management practices for their cropping systems.
- iv.** Identify soil fertility related constraints and develop need based fertilizer management strategy with the help of SAUs & ICAR.

Norms of soil sampling

- Irrigated area:-
 - a) at 2.5 ha grid for marginal and small holdings.
 - b) one sample each holding for semi-medium, medium & large holdings (Irrigated Area/Av.size).
- Rainfed area :-
 - a) at 10 ha grid for marginal, small, semi-medium & medium holdings.
 - b) one sample each holding for large holdings (Rainfed Area /Av.size).
- The ideal time for collection of soil samples is between harvest of one crop and sowing/planting of other crop, when fields are vacant.
- The sampling depth for field crops should kept 0 to 15 cm.
- GPS co-ordinates have to be essentially recorded at the time of soil sampling which will be downloaded in the STL computer.

Soil analysis:-

- I. Soil samples should be processed following standard procedures and analyzed for various parameters namely pH, electrical conductivity (EC), organic carbon (OC), and available P, K, S and micronutrients.
- II. In addition, science colleges having soil testing laboratories may be assigned the task of soil testing. The students can do the work of soil testing under guidance and supervision of professors.
- III. To overcome staff shortage, the testing of samples in the soil testing laboratories may be outsourced to private agencies. Alternatively, JRFs may be employed for testing of soil samples.
- IV. The soil analysis has to be completed within 3 weeks of receipt of soil samples in the STL.
- V. In addition to distribution of SHCs through post/extension staff, mechanism will be developed for online delivery of soil health cards also to the farmers using ICT.

Soil Health Card:-

Soil health card is field-specific detailed report of soil fertility status and other important soil parameters that affect crop productivity. Besides, soil health, it also provides an advisory on soil test based use of fertilizers and amendments.

Details in a Soil Health Card:

- i. Information regarding Soil Fertility
- ii. Dosage of fertilizer application in crops.
- iii. Information on soil amendments of saline or alkaline soil.
- iv. Recommendation on integrated nutrient management.

Strengthening & Setting up of Soil Testing Labs

Introduction:-

Soil & water are the greatest natural resources gifted to mankind. Our country basically depends upon agriculture, thus it becomes more so important to study, analyze and effectively manage soil and water. Soil being the basic media for the plants to stand and grow and water becomes the lifeline to the plants. In view of this a greater importance has been attached for management of soil and water by way of analysis, there by contributing increased productivity in modern agriculture.

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Objectives :

- To estimate the available nutrient status, reaction of the soil.
- To determine accurate dose of nutrient to be applied for a particular soil to avoid excessive fertilizer application and bring down expenditure on fertilizers.
- Determining the presence or absence of abnormal soil conditions such as salinity, alkalinity or acidity, determine their magnitude and suggest ameliorants for reclamation.
- To evaluate the fertility status of a State or a district or a field and prepare soil fertility maps for fertilizer recommendations
- To bring the awareness about the importance of soil and water testing among the farming community for increased yields/returns.

It is proposed to establish 2 new soil testing labs in each of the 7 districts and one new soil testing lab in Mahabubnagar & Nizamabad districts totaling to 16 new STLs with a financial outlay of Rs 870.00 lakhs @ Rs 534.38 lakhs per lab and also to establish 2 new Mobile Soil testing labs in Mahabubnagar & Nalgonda districts with a financial outlay of Rs 118.00 lakhs @ Rs 59.00 lakhs per lab.

a) Setting up of new Soil Testing Laboratories:

(Rs in Lakhs).

S.No.	Component	Units (No.)	Budget proposed
1	Static Soil Testing Laboratories	16	
	a) Infrastructure		480.00
	b) Recurring Expenditure		90.00
	c) Hiring charges		300.00
	Sub Total		870.00
2	Mobile Soil Testing Laboratory	2	
	a) Infrastructure with van		104.00
	b) Recurring Expenditure		6.00
	c) Hiring charges		8.00
	Sub Total		118.00
	Grand Total	18	988.00

It is proposed to strengthen the existing 11 district soil testing labs in the State with a financial outlay of Rs 132.00 lakhs @ 12.00 lakhs per lab & also to strengthen the existing Mobile Soil testing lab in the State with a financial outlay of Rs 12.00 lakhs.

(Rs in Lakhs)

S.No	Component	Units (No.)	Budget proposed
I	Strengthening of existing static Soil Testing Laboratories	11	
	a) Infrastructure		66.00
	b) Recurring Expenditure		33.00
	c) Hiring charges		33.00
	Sub Total		132.00
II	Strengthening of existing Mobile Soil Testing Laboratory Infrastructure	1	
	a) Recurring Expenditure		5.00
	b) Hiring charges		3.00
	Sub Total		4.00
			12.00
	Grand Total		144.00

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Hence, the total budget required for setting up of new STLs and strengthening of existing STLs is Rs 1132.00 lakhs.

Outcomes:

- Judicious use of fertilizers based on Soil test results.
- Reduction in indiscriminate use of fertilizers results in reduced soil ill effects.
- Reduction in cost on fertilizers decreases the total cost of cultivation there by improves the profit margin to farmers.

Dr.POONAM MALAKONDAIAH
APC & PRINCIPAL SECRETARY TO GOVERNMENT